

## SALINE CALCAREOUS LOAM (Magnesia soil)

**General Description:** *Calcareous loam becoming more clayey and calcareous at depth with variable rubble, continuing below 120 cm, and saline throughout*

**Landform:** Very gently undulating plain.

**Substrate:** Very highly calcareous sandy clay loam (Wiabuna Formation).

**Vegetation:** None.

<b>Type Site:</b>	Site No.:	EF025		
	1:50,000 sheet:	5534-3 (Penong)	Hundred:	Bagster
	Annual rainfall:	325 mm	Sampling date:	28/10/88
	Landform:	Flat		
	Surface:	Firm and scalded with no stones		

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-4	Orange soft massive highly calcareous loam. Abrupt to:
4-8	Orange hard massive highly calcareous sandy clay loam. Sharp to:
8-20	Orange hard massive highly calcareous clay loam. Abrupt to:
20-55	Reddish yellow hard massive very highly calcareous clay loam with 10-20% carbonate nodules. Clear to:
55-80	Orange firm massive highly calcareous sandy clay loam.



**Classification:** Hypervescent, Regolithic, Hypercalcic Calcarosol; medium, non-gravelly, loamy / clay loamy, moderate

### Summary of Properties

- Drainage** Well drained. The soil is never wet for more than a few days.
- Fertility** Inherent fertility is moderately low, as indicated by the exchangeable cation data. High carbonate content to the surface reduces the availability of phosphorus, zinc, manganese and copper.
- pH** Alkaline at the surface, strongly alkaline with depth.
- Rooting depth** 20 cm in pit.
- Barriers to root growth**
- Physical:** There are no physical barriers.
  - Chemical:** Very high salinity, sodicity and boron levels from near the surface restrict root depth.
- Water holding capacity** Approximately 30 mm in the root zone.
- Seedling emergence:** Poor, due to extreme surface salinity.
- Workability:** Surface soil is firm to soft and easily worked if necessary (too saline for conventional crops and pastures).
- Erosion Potential**
- Water:** Low.
  - Wind:** Moderately low.

### Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-4	8.5	8.4	23	6.0	76.44	-	-	-	-	32.2	0.52	2.20	18.5	0.47	14.00	-	3.10	2.00	3.50	14
4-8	8.7	8.5	27	5.6	66.15	-	-	-	-	50.9	0.54	2.00	11.3	0.38	14.50	-	4.10	4.00	3.90	28
8-20	8.9	8.6	36	3.8	39.69	-	-	-	-	46.6	0.28	1.18	4.8	0.11	14.00	-	3.70	2.00	3.01	26
20-55	9.2	8.9	57	2.65	28.67	-	-	-	-	41.9	0.42	1.76	3.0	0.08	11.00	-	5.90	3.00	1.70	54
55-80	9.4	8.8	55	2.8	22.79	-	-	-	-	18.5	0.50	1.56	1.0	0.07	8.60	-	4.90	2.90	1.40	57

**Note:** CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC

\* Exchangeable calcium (Ca) values not presented because the laboratory procedure used was inappropriate for very highly calcareous samples.